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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/591,696	07/16/2007	Kazumasa Takeuchi	1303.46565X00	3031

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EXAMINER

THOMPSON, CAMIE S

ART UNIT	PAPER NUMBER
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1794

MAIL DATE	DELIVERY MODE
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02/06/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/591,696	Applicant(s) TAKEUCHI ET AL.	
	Examiner Camie S. Thompson	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>9/5/00; 3/7/07; 6/25/07</u> | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 3 is rendered indefinite because chemical formula 1 is not an imide structure. Claim 3 recites that the imide structure is represented by chemical formula 1.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

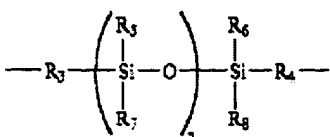
(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-7, 9-11 and 14-16 are rejected under 35 U.S.C. 102(a & e) as being anticipated by Takeuchi et al., U.S. Patent Number 7,138,174.

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C.

102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Takeuchi discloses a prepreg laminate comprising a fiber base impregnated with a resin composition. Additionally, the reference discloses that the resin composition comprises an imide resin with an epoxy resin as per instant claims 1, 9 and 14 (see abstract and column 3, lines 14-25). The reference also discloses that the epoxy has two or more glycidyl groups as per instant claim 10 (see column 8, lines 30-65). The reference also discloses that the fiber base has a thickness of 10 to 200 microns as per instant claim 1 (see column 10, lines 1-12). It is disclosed in column 3 that the imide resin is preferably a siloxane modified polyamide imide as per instant claims 2-6. It is disclosed in column 9, lines 44-50 that an antioxidant is used. Example 5 discloses a phosphorus containing compound in the composition as per instant claim 11. Column 7, lines 54-60 of the reference discloses that the epoxy is present in an amount of 1-200 parts by weight relative to 100 parts by weight of the polyamide imide resin as per instant claim 11. A metal-clad laminate sheet is obtained by stacking several prepregs together with metal foil on either or both sides of the stack and subjecting the resulting stack to heat and pressure as per instant claim 15 (see column 10, lines 34-59). Column 11 discloses that a circuit board is formed by forming a circuit on the metal foil of the metal clad laminate as per instant claim 16. The reference discloses a polyamide imide resin with siloxane modification with the structure



wherein R₃ is a divalent organic group and would read on instant

claim 7. Claims 5-6 and 14 are product-by-process claims. Even though product-by-process claims are limited and defined by the process, patentability is based on the product itself. The patentability of a product does not depend on its method. See MPEP 2113.

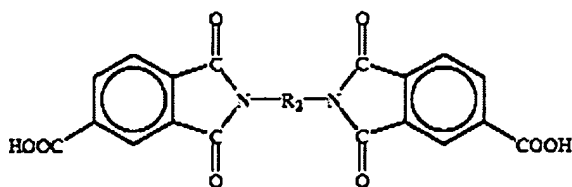
Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 8 is rejected under 35 U.S.C. 103(a) as being obvious over Takeuchi et al., U.S. Patent Number 7,138,174 in view of JP 11-335652.

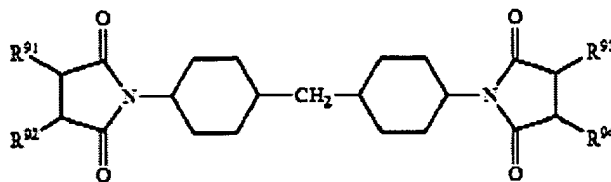
7. Takeuchi discloses a prepreg laminate comprising a fiber base impregnated with a resin composition. Additionally, the reference discloses that the resin composition comprises an imide resin with an epoxy resin (see abstract). Takeuchi discloses a resin



structure

. Takeuchi does not disclose the

polyamide imide resins as required by present claim 8. The Japanese reference discloses a



polyimide resin having the structure . The


polyimide resin of the Japanese reference has excellent heat resistance. Therefore, it would have been obvious to one of ordinary skill in the art to use the polyimide resin of the Japanese reference in the Takeuchi reference in order to have a prepreg that can withstand high temperatures.

8. Claims 12-13 are rejected under 35 U.S.C. 103(a) as being obvious over Takeuchi et al., U.S. Patent Number 7,138,174 in view of Mizuno et al., U.S. Patent number 7,157,506.

Takeuchi discloses a prepreg laminate comprising a fiber base impregnated with a resin composition. Additionally, the reference discloses that the resin composition comprises an imide resin with an epoxy resin (see abstract). Takeuchi discloses the use of an antioxidant in the resin composition. However, Takeuchi does not disclose the specific antioxidant as required by present claims 12 and 13. Mizuno discloses a resin composition comprising epoxy and imide resin and an antioxidant such as distearyl thiodipropionate (see column 17, line 43-column 18, line 4). Mizuno also discloses that the resin composition can be used in a prepreg or metal-clad laminate (see abstract). Mizuno discloses that the antioxidant(s) used in the composition increase the dielectric properties of the composition. Therefore, it would have been obvious to one of ordinary skill in the art the use distearyl thiodipropionate as the antioxidant in the Takeuchi reference in order to have a printed circuit board that can handle high frequency signals due to the excellent dielectric properties of the laminate.

Any inquiry concerning this communication or earlier communication from the examiner should be directed to Camie S. Thompson whose telephone number is (571) 272-1530. The examiner can normally be reached on Monday through Friday from 7:30 am to 4:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena L Dye, can be reached at (571) 272-3186. The fax phone number for the Group is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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